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Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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SEARCHED

1 of 13

Complete if Known

Application Number	09/841,809
Filing Date	April 24, 2001
First Named Inventor	Meade, T.
Group Art Unit	Not Yet Assigned 1652
Examiner Name	Not Yet Assigned
Attorney Docket Number	A-64789-3/RFT/RMS/RMK

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U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
ME	1	4,707,352		Stavrianopoulos	11/1987
	2	4,707,440		Stavrianopoulos	11/1987
	3	4,711,955		Ward et al.	12/1987
	4	4,755,458		Rabbani et al.	7/1988
	5	4,840,893		Hill et al.	6/1989
	6	4,849,513		Smith et al.	7/1989
	7	4,868,103		Stavrianopoulos et al.	9/1989
	8	4,894,325		Englehardt et al.	1/1990
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	10	4,952,685		Stavrianopoulos	8/1990
	11	4,994,373		Stavrianopoulos	2/1991
	12	5,002,885		Stavrianopoulos	3/1991
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	14	5,082,830		Brakel et al.	1/1992
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	16	5,241,060		Englehardt et al.	8/1993
	17	5,278,043		Bannwarth et al.	1/1995
	18	5,312,527		Mikkelsen et al.	5/1994

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Examiner Initials*	Cite No. ¹	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
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ME	19	EP	0 234 938	A2 Cranfield Inst. of Tech.	2/1987
ME	20	EP	0 229 943	B1 Molecular Biosystems Inc.	7/1987
ME	21	EP	0 599 337	A2 Canon Kabushiki Kaisha	1/1994
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ME	23	EP	0 515 615	Boehringer Nannheim	9/1996
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ME	25	JP	238,166	A Mitsubishi Corp.	1988
ME	26	JP	6-41183	A2 Mitsubishi Corp.	1994

Examiner Signature	<i>ME</i>	Date Considered	9/9/04
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¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English Language Translation is attached.

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		Number	Kind Code ² (if known)			
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	28	5,403,451		Riviello et al.	4/1995	
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	45	WO	90/05732	A1	Columbia Univ.	5/1990
	46	WO	92/10757	A1	Boehringer Mannheim	6/1992
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	50	WO	95/15971	A2	Calif. Inst. of Technology	6/1995
	51	WO	96/40712	A1	Calif. Inst. of Technology	12/1996

Examiner Signature	<i>[Signature]</i>	Date Considered	4/9/04
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				Filing Date	April 24, 2001
				First Named Inventor	Meade, T.
				Group Art Unit	Not Yet Assigned 1652
				Examiner Name	Not Yet Assigned No Sh
3	of	13		Attorney Docket Number	A-64789-3/RFT/RMS/RMK

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		Number	Kind Code ² (if known)		
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	53	5,824,473		Meade et al.	10/1998
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	57	5,795,453		Gilmartin et al.	08/1998
	58	4,704,193		Bowers et al.	11/1987

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Examiner Initials*	Cite No. ¹	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Office ³	Number ⁴		
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	60	WO	97/44651	A1 AU Membrane and	11/1997
	61	WO	97/27329	A1 Univ. of Chicago	7/1997
	62	WO	98/20162	A2 Clinical Micro Systems	5/1998
	63	WO	98/27229	A1 Univ. of Chicago	6/1998
	64	WO	98/28444	A2 Univ. of Chicago	7/1998
	65	WO	98/35232	A2 Univ. of N. Carolina	8/1998
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	71	WO	93/25898		12/1993

Examiner Signature	H. Meade	Date Considered	6/19/04
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**INFORMATION DISCLOSURE
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Sheets 4 of 13

Complete if Known

Application Number	09/841,809
Filing Date	April 24, 2001
First Named Inventor	Meade, T.
Group Art Unit	Not Yet Assigned 1652
Examiner Name	Not Yet Assigned Moishipour
Attorney Docket Number	A-64789-3/RFT/RMS/RMK

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
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Examiner Signature	<i>Moishipour</i>	Date Considered	9/9/04
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JUL 16 2001
Sheet 5

of 13

Complete if Known	
Application Number	09/841,809
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First Named Inventor	Meade, T.
Group Art Unit	Not Yet Assigned 1655 C
Examiner Name	Not Yet Assigned Monshipper
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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
TCR	89	Chang, I-Jy, et al., "High-Driving-Force Electron Transfer in Metalloproteins: Intramolecular Oxidation of Ferrocytocrome c by Ru(2,2'-bpy) ₂ (im)(His-33) ³⁺ ," <i>J. Am. Chem. Soc.</i> , 113:7056-7057 (1991).	
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Examiner Signature

TCR

Date Considered

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TCR	105	Durham, B., et al., "Photoinduced Electron-Transfer Kinetics of Singly Labeled Ruthenium Bis(bipyridin) Dicarboxybipyridine Cytochrome c Derivatives," <i>Biochemistry</i> , 28:8659-8665 (1989).	
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Examiner Signature	TCR	Date Considered	4/9/04
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Application Number	09/841,809
JUL 16 2001 (use as many sheets as necessary)		Filing Date	April 24, 2001
		First Named Inventor	Meade, T.
		Group Art Unit	Not Yet Assigned 1652
		Examiner Name	Not Yet Assigned Monshizou ~
		Attorney Docket Number	A-64789-3/RFT/RMS/RMK
<input checked="" type="checkbox"/> <i>Information Disclosure Statement</i> <input type="checkbox"/> <i>Assignment</i> <input type="checkbox"/> <i>Power of Attorney</i> <input type="checkbox"/> <i>Other (specify)</i>			
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TC.RP	122	Heller, A., "Electrical Wiring of Redox Enzymes," <i>Acc. Chem. Res.</i> , 23:128-134 (1990).		
TC.RP	123	Heller et al., "Fluorescent Energy Transfer Oligonucleotide Probes," <i>Fed. Proc.</i> 46(6):1968 (1987) Abstract No. 248.		
TC.RP	124	Heller, A., et al., "Amperometric biosensors based on three-dimensional hydrogel-forming epoxy networks," <i>Sensors and Actuators</i> , 13-14:180-183 (1993).		
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	09/841,809
JA 16 2001 <i>(use as many sheets as necessary)</i>				Filing Date	April 24, 2001
				First Named Inventor	Meade, T.
				Group Art Unit	Not Yet Assigned 1652
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8		of	13	Attorney Docket Number	
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TM	139	Lenhard, J.R., et al., "Part VII Covalent Bonding of a Reversible-Electrode Reactant to Pt Electrodes Using an organosilane Reagent" <i>J. Electronal. Chem.</i> , 78:195-201 (1977).			
—	140	Lincoln et al., "Shorting Circuiting the Molecular Wire," <i>J. Am. Chem. Soc.</i> , 119(6):1454-1455 (1997).			
TM	141	Lipkin "Identifying DNA by the Speed of Electrons," <i>Science News</i> , 147(8):117 (1995).			
—	142	Livshits, M. et al., "Theoretical Analysis of the Kinetics of DNA Hybridization with Gel-Immobilized Oligonucleotides," <i>Biophysical Journal</i> , 71:2795-2801 (1996).			
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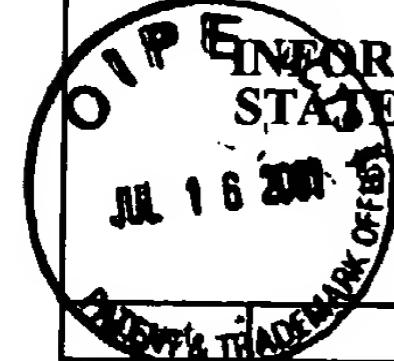
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Application Number	09/841,809
Filing Date	April 24, 2001
First Named Inventor	Meade, T.
Group Art Unit	Not Yet Assigned 1652
Examiner Name	Not Yet Assigned Mojschiyan
Attorney Docket Number	A-64789-3/RFT/RMS/RMK

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

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—	156	Maeic et al., "DNA-Directed Synthesis of Binary Nanoparticle Network Materials," <i>J. Am. Chem. Soc.</i> , 120:12674-12675 (1998).	
re. re.	157	Murphy, C. J., et al., "Long-Range Photoinduced Electron Transfer Through a DNA Helix," <i>Science</i> , 262:1025-1029 (1993).	
re. re.	158	Orellana, G., et al., "Photoinduced Electron Transfer Quenching of Excited Ru(II) Polypyridyls Bound to DNA: The Role of the Nucleic Acid Double Helix," <i>Photochemistry and Photobiology</i> , 54(4):499-509 (1991).	
re. re.	159	Palecek, "From Polarography of DNA to Microanalysis with Nucleic Acid-Modified Electrodes," <i>Electroanalysis</i> , 8(1):7-14 (1996).	
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re. re.	164	Purugganan, M. D., et al., "Accelerated Electron Transfer Between Metal Complexes Mediated by DNA," <i>Science</i> , 241:1645-1649 (1988).	
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re. re.	166	Rhodes, D. And A. Klug, "Helical Periodicity of DNA Determined by Enzyme Digestion," <i>Nature</i> , 286:573-578 (1980).	
re. re.	167	Risser, S. M., et al., "Electron Transfer in DNA: Predictions of Exponential Growth and Decay of Coupling with Donor-Acceptor Distance," <i>J. Am. Chem. Soc.</i> , 115(6):2508-2510 (1993).	
re. re.	168	Sato, Y., et al., "Unidirectional Electron Transfer at Self-Assembled Monolayers of 11-Ferrocenyl-1-undecanethiol on Gold," <i>Bull. Chem. Soc. Jpn.</i> , 66(4):1032-1037 (1993).	
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re. re.	171	Schuhmann, W., et al., "Electron Transfer between Glucose Oxidase and Electrodes via Redox Mediators Bound with Flexible Chains to the Enzyme Surface," <i>J. Am. Chem. Soc.</i> , 113:1394-1397 (1991).	

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		Filing Date	April 24, 2001
		First Named Inventor	Meade, T.
		Group Art Unit	Not Yet Assigned 1652
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				Group Art Unit	Not Yet Assigned K05 2
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TCR	186	Turro, N., et al. "Photoelectron Transfer Between Molecules Adsorbed in Restricted Spaces," <i>Photochem. Convers. Storage Sol. Energy, Proc. Int. Conf.</i> , 8th, pp 121-139 (1990).			
TCR	187	Uosake, K., et al., "A Self-Assembled Monolayer of Ferrocenylalkane Thiols on Gold as an Electron Mediator for the Reduction of Fe(III)-EDTA in Solution," <i>Electrochimica Acta.</i> , 36(11/12):1799-1801 (1991).			
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		Attorney Docket Number	A-64789-3/RFT/RMS/RMK
Sheet	1	of	13

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Signature		Date Considered	
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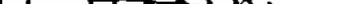
Substitute for form 1449A/PTO		<i>Complete if Known</i>	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Application Number	09/841,809
		Filing Date	April 24, 2001
		First Named Inventor	Meade, T.
		Group Art Unit	Not Yet Assigned 1652
		Examiner Name	Not Yet Assigned Monsh-puri
Sheet	1	of	13
		Attorney Docket Number	A-64789-3/RFT/RMS/RMK

U.S. PATENT DOCUMENTS

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
RE	208	4,945,045		Forrest et al.	07/1990	
	209	5,089,112		Skotheim et al.	02/1992	
	210	5,180,968		Bruckenstein et al.	01/1993	
	211	5,356,786		Heller et al.	10/1994	
	212	5,391,272		O'Daly et al.	02/1995	
	213	5,436,161		Bergstrom et al.	07/1995	
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	216	6,060,023		Maracas	05/2000	
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	219	6,087,100		Meade et al.	07/2000	
	220	6,096,273		Kayyem et al.	08/2000	
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	222	6,177,250		Meade et al.	01/2001	
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RE	225	6,238,870		Meade et al.	05/2001	

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		Office ³	Number ⁴	Kind Code ² (if known)				
—	226	WO	97/41425			11/1997		
—	227	WO	86/05815	A1	Genetics International Inc.	3/1985		
—	228	WO	98/57159	A1	Clinical Micro Systems	6/1997		
—	229	WO	99/37819	A2	Clinical Micro Systems	1/1998		

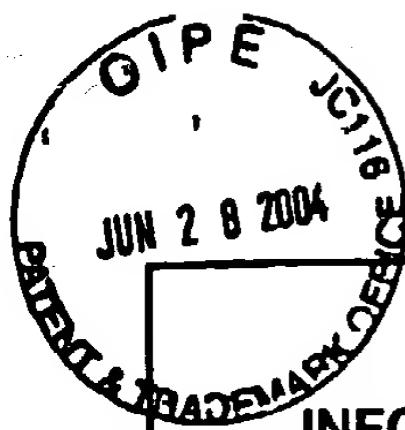
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(Modified)

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet

1

of

4

Complete if Known	
Application Number	09/841,809
Filing Date	April 24, 2001
First Named Inventor	Thomas J. MEADE
Art Unit	1652
Examiner Name	Monshipouri, Maryam
Attorney Docket Number	A-64789-3/RFT/RMS/RMK (463037-00104)

U.S. PATENT DOCUMENTS

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R.M.	A1	5,238,808	08-24-1993	Bard et al.	
	A2	5,308,754	05-03-1994	Kankare et al.	
	A3	5,532,128	07-02-1996	Eggers et al.	
	A4	5,565,322	10-15-1996	Heller	
	A5	5,653,939	08-05-1997	Hollis et al.	
	A6	5,670,322	09-23-1997	Eggers et al.	
	A7	5,837,859	11-17-1998	Teoule et al.	
	A8	5,846,708	12-08-1998	Hollis et al.	
	A9	5,871,918	02-16-1999	Thorp et al.	
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	A11	5,891,630	04-06-1999	Eggers et al.	
	A12	5,929,208	07-27-1999	Heller et al.	
	A13	5,942,388	08-24-1999	Willner et al.	
	A14	5,942,397	08-24-1999	Tarlov et al.	
	A15	5,952,172	09-14-1999	Meade et al.	
	A16	6,013,170	01-11-2000	Meade	
	A17	6,013,459	01-11-2000	Meade	
	A18	6,017,696	01-25-2000	Heller	
	A19	6,048,690	04-11-2000	Heller et al.	
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	A21	6,066,448	05-23-2000	Wohlstadter et al.	
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	A24	6,096,500	08-01-2000	Oprandy et al.	
	A25	6,127,127	10-03-2000	Eckhardt et al.,	
	A26	6,140,045	10-31-2000	Wohlstadter et al.	
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	A28	6,197,515 B1	03-06-2001	Barndad et al.	
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Examiner Signature	Date Considered
<i>[Signature]</i>	9/9/04

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Substitute for form 1449A/PTO (Modified)				Complete if Known	
				Application Number	09/841,809
				Filing Date	April 24, 2001
				First Named Inventor	Thomas J. MEADE
				Art Unit	1652
				Examiner Name	Monshipouri, Maryam
Sheet	2	of	4	Attorney Docket Number	A-64789-3/RFT/RMS/RMK (463037-00104)

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
TC	A32	6,258,545 B1	07-10-2001	Meade et al.	
	A33	6,268,149 B1	07-31-2001	Meade et al.	
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	A38	6,322,979 B1	11-27-2001	Bamdad et al.	
	A39	6,331,274 B1	12-18-2001	Ackley et al.	
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	A52				
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TC	B1	EP 0478319 B1	04-01-1992	Toshiba		
TC	B2	EP 0668502 B1	05-22-2002	Yissum Research Development		
TC	B3	WO 98/12539 A1	03-26-1998	Meso Scale Technologies, LLC		

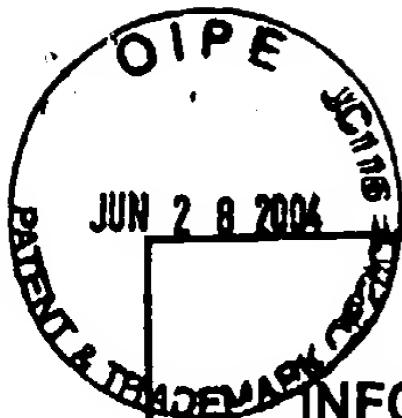
Examiner Signature	<i>TC R. Meade</i>	Date Considered	9/9/04
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				First Named Inventor	Thomas J. MEADE
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Sheet	3	of	4	Attorney Docket Number	A-64789-3/RFT/RMS/RMK (463037-00104)

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RL	B4	WO 98/31839 A2, A3	07-23-1998	Presidents & Fellows of Harvard College		
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—	B7	WO 99/57319 A1	11-11-1999	Clinical Micro Sensors		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T*
RL	C1	BAIN et al., "Formation of Monolayers by the Coadsorption of Thiols on Gold: Variation in the Length of the Alkyl Chain," Journal of the American Chemical Society, 1989, 111:7164-7175.	
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RL	C11	LANGEN et al., "Electron Tunneling in Proteins: Coupling Through a β Strand," Science, 1995, 268:1733-1735.	

Examiner Signature	<i>[Signature]</i>	Date Considered	9/9/04
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Sheet	4	of	4	Attorney Docket Number	A-64789-3/RFT/RMS/RMK (463037-00104)

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.*	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T*
M.E.	C12	MUTZ et al., "Conformational dependence of electron transfer across de novo designed metalloproteins," Proceedings of the National Academy of Science USA, 1996, 93:9521-9526.	
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Examiner Signature	<i>Thomas J. Meade</i>	Date Considered	6/19/04
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